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10/562,047	08/08/2006	Jean-Francois Estur	1022702-000153	6151
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EXAMINER				
WOLLSCHLAGER, JEFFREY MICHAEL				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

### Office Action Summary

**Application No.**

10/562,047

**Applicant(s)**

ESTUR ET AL.

**Examiner**

JEFFREY WOLLSCHLAGER

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-22 and 24-37 is/are pending in the application.
- 4a) Of the above claim(s) 26-28 and 34-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-22, 24, 25 and 29-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's amendment to the claims filed September 17, 2009 has been entered. Claim 30 has been amended. Claims 1-14 and 23 have been canceled. Claims 26-28 and 34-37 remain withdrawn from further consideration. Claims 15-22, 24, 25, and 29-33 are under examination. Applicant's amendment to claim 30 has overcome the previous objection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 18, 21, 24, 25 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruning et al. (US 6,315,931).

Regarding claims 15 and 30, Bruning et al. teach the claimed process of preparing a bead/pearl of expanded polymer having a continuous skin comprising extruding a thermoplastic and an expanding agent in a molten state to effect expansion thereof and cooling and chopping the expanded material at the die outlet with, in a preferred embodiment, an underwater granulating machine (Abstract; col. 1, lines 53-57; col. 2, lines 9-14; Examples 1 and 2).

As to claim 18, Bruning et al. exemplify isobutane as the blowing agent (Example 1).

As to claim 21, Bruning et al. exemplify a nucleating agent (Example 1).

As to claims 24 and 31, Bruning et al. teach the diameter of the bead/pearl is preferably 2 to 8 mm (col. 2, lines 30-34).

As to claims 25, 32 and 33, Bruning et al. teach the density of the bead/pearl is 10 to 600 g/l and exemplify a density of 100 g/l (0.1 g/cm<sup>3</sup>) (Abstract; Example 1)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 16, 17, 20, 22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruning et al. (US 6,315,931), as applied to claims 15, 18, 21, 24, 25 and 30-33 above, and further in view of Pontiff (EP 0 450 205).

As to claim 16, Pontiff discloses that inert gases such as nitrogen and carbon dioxide may be employed as the blowing agent (page 4, lines 24-26; page 11, lines 44-46). As set forth in the original disclosure, published as US 2007/0036967, paragraph [0027], nitrogen and carbon dioxide meet the limitation.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Bruning et al. and to have

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employed gases such as nitrogen and carbon dioxide as a blowing agent, as suggested by Pontiff, since Pontiff suggests such blowing agents are equivalent alternative blowing agents known in the art to be suitable for forming a foamed product (MPEP 2144.06-2144.07).

As to claim 17, Pontiff teaches that solid materials that decompose to form a gas, such as azodicarbonamide, may be employed as the blowing agent (page 4, lines 24-26; page 13, lines 27-32). ). As set forth in the original disclosure, published as US 2007/0036967, paragraph [0028], the decomposing blowing agents, such as azodicarbonamide meet the limitation of a pore-forming agent.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Bruning et al. and to have employed gases such as nitrogen and carbon dioxide as a blowing agent, as suggested by Pontiff, since Pontiff suggests such blowing agents are equivalent alternative blowing agents known in the art to be suitable for forming a foamed product (MPEP 2144.06-2144.07).

As to claim 20, Pontiff teaches the thermoplastic material may be a polyamide (page 4, lines 26-30).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Bruning et al. and to have employed a polyamide as the thermoplastic, as suggested by Pontiff, since Pontiff suggests such a thermoplastic is known in the art to be suitable for forming a foamed bead/pearl product (MPEP 2144.06-2144.07).

As to claims 22 and 29, Pontiff teaches conventional additives such as fillers and anti-static agents may be employed (page 14, lines 40-42).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Bruning et al. and to have

employed conventional additives, as suggested by Pontiff, since such additives are known to achieve desired properties in the final product, facilitate processing, improve aesthetics, and reduce operating costs.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruning et al. (US 6,315,931), as applied to claims 15, 18, 21, 24, 25 and 30-33 above, and further in view of Amano et al. (US 5,234,640).

As to claim 19, Bruning et al. teach the method of claim 15 as set forth above. Bruning et al. do not teach that the blowing agent comprises a chemical compound that can react chemically with the polymer by heating to generate a gas. However, Amano et al. teach a method of producing foamed thermoplastic materials wherein they disclose that aromatic polycarbonate is known to be a blowing agent and suggest that it is an equivalent alternative of azodicarbonamide, nitrogen, carbon dioxide, and various other blowing agents (col. 4, lines 11-30). The examiner notes that in the original disclosure, published as US 2007/0036967, paragraph [0030], polycarbonate is disclosed as a blowing agent that meets the instant limitation.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Bruning et al. and to have employed polycarbonate as a blowing agent, as suggested by Amano et al., since Amano et al. suggest polycarbonate is an equivalent alternative blowing agent known in the art to be suitable for forming a foamed product (MPEP 2144.06-2144.07).

***Response to Arguments***

Applicant's arguments filed September 17, 2009 have been fully considered, but they are not persuasive. Applicant argues that Bruning does not teach a pearl having a spherical or essentially spherical shape, but teaches a semi-spherical granulate. This argument is not persuasive. The examiner does not agree that claim 15 requires the pearl to be "spherical or essentially spherical" pearl. Pointing to the same paragraph as set forth in the arguments, the examiner notes that paragraph [0019] recites: "The term 'pearl' means a small article whose largest dimension is less than or equal to 15 mm. The term 'pearl' preferably means a spherical or essentially spherical article." Accordingly, the examiner submits that the term is explicitly not limited to a spherical or essentially spherical article and as set forth in the claims a pearl is only limited to a small article whose largest dimension is less than or equal to 15 mm. While the examiner agrees that Bruning teaches a semi-spherical granulate, the examiner submits that claim 15 does not exclude the use of a semi-spherical granulate. Should it be applicant's intent to have the term pearl interpreted as being a spherical or essentially spherical article with a diameter of less than or equal to 15 mm the body of claim 15 would need to be amended to include such a limitation.

Applicant's other arguments appear to suggest that Bruning et al. do not meet the cooling and chopping limitation set forth in the claims. This argument is not persuasive. The examiner notes that both Bruning and the instant application suggest employment of underwater granulators/pelletizers. Further, the examiner notes that while the chopping blade of Bruning is on the backside of the perforated plate/die this is still "at the die outlet". In other words, Bruning's blade is at the die outlet on the upstream side of the outlet. The examiner submits that this is quite a reasonable interpretation of the requirement to be "at the die outlet" and that should it be applicant's intent to limit the term "at the die outlet" in some other manner (which is

not clear in the arguments) the claims would need to be further amended in a manner supported by the original disclosure to exclude a chopper blade on the upstream side of the die outlet. Further, it is noted that the molten resin of Bruning extrudes through the perforated plate/die and expands as it is extruded directly into the water bath of the underwater pelletizer. The expanded material thus obtained in Bruning is chopped with the chopping blade located immediately behind the perforated plate/die (i.e. at the die outlet on the upstream side of the die) to separate it from the rest of the continuously extruding strand to form the semi-spherical granulate. Accordingly the limitations of step a) and step b) are taught by Bruning et al. in a clear and reasonable interpretation. The examiner submits that the comments regarding the temperature of the polymer before the cutting tip in Bruning do not negate that the expanded material is chopped to separate it from the rest of the extruding strand and that such chopping by Bruning (even with the blade on the upstream side of the die outlet) is within the scope of the claims as they are currently presented.

The examiner submits that, contrary to applicant's arguments that the examiner is not properly considering all the words in claim 15, the arguments are being presented through an interpretation of the claim which, while consistent with the language of the claim, is narrower than that which is quite reasonably suggested by the language set forth in the claim and the specification. The examiner submits that the claims would need to be amended to overcome the teaching of Bruning.



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Wollschlager/  
Primary Examiner  
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December 8, 2009